

## SECTION 08322

## MISCELLANEOUS DOORS

12/97

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36	(1996) Carbon Structural Steel
ASTM A 167	(1996) Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
ASTM A 525	(1991b) General Requirement for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
ASTM E 330	(1990) Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference

## NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA ICS 2	(1993) Industrial Control Devices, Controllers and Assemblies
------------	---

## NATIONAL FIRE PROTECTION (NFPA)

NFPA 101	(1997) Safety to Life from Fire in Buildings and Structures
----------	---

## #.1 GENERAL

## #.1 Field Measurements

The Contractor shall verify all measurements at the building site and shall be responsible for dimensions, fitting, and the proper attachment of items directly connected with the door installation.

## 1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Drawings

Shop drawings; GA.

A schedule showing the location of each door shall be submitted with the shop drawings. Drawings shall indicate elevations of each door type, details and method of anchorage; details of construction; method of assembling sections; location and installation of hardware; size, shape, and thickness of materials, joints and connections, hinges for swinging blast doors, details of trolley tracks, rollers, roller guides, fittings and other attachments. Shop drawings shall include catalog cuts or descriptive data and drawings for the weatherstripping, chain drives, sprockets, manual operators, axil sleeve, limit switch assemblies for top trolley and bottom leading edges of door and other accessories.

#### SD-06 Instructions

Manufacturer's Instructions; GA.

Manufacturer's installation instructions shall be submitted for approval.

#### SD-13 Certificates

Certificate of Compliance; FIO.

Certificate of compliance attesting that materials and assemblies meet specification requirements shall be furnished.

#### #.1 HARDWARE

Hardware shall conform to Section 08700 BUILDERS' HARDWARE.

#### #.1 PAINTING

Painting shall conform to Section 09900 PAINTING, GENERAL.

#### #.1 PRODUCT DELIVERY, HANDLING AND STORAGE

Doors and frames shall be delivered, stored, handled, and installed so as not to be damaged or deformed. Abraded, scarred, or rusty areas shall be cleaned and painted immediately upon detection. Doors and frames stored at the site before installation shall be stacked on platforms or pallets and covered with tarpaulins or other suitable covering to provide weathertight enclosure while affording proper air circulation.

### PART 2 PRODUCTS

#### #.1 SLIDING AND SWINGING BLAST DOORS

##### #.1 Design

Doors and hardware shall be designed for high frequency, industrial application, and to withstand blast loads as shown on drawings. Doors shall be complete with operators, hardware and tracks, as applicable. Doors exposed to weather shall have flexible neoprene weatherstripping as shown on the drawings in a manner for easy replacement and adjustment. Doors shall be mounted on exterior face of exterior walls to provide full opening of the doorway. Doors electrically operated shall have devices for securing operator chain or cable as shown on the drawing. Exterior swinging steel

doors shall be grounded on the interior to the building's structural steel with heavy duty flexible cable. See sub paragraph 7.5.5 (Electrical Work) for horizontal sliding door grounding. Exterior steel doors shall be insulated. Insulation shall be of such thickness and material to provide a coefficient of heat transmission or U-value, B.t.u. per hour, per square foot, per degree Fahrenheit temperature difference, through the completed door air to air, not in excess of .05 for swinging blast doors and .026 for sliding blast doors .026 when determined for winter conditions using recognized methods in agreement with the ASHRAE Handbook, Fundamentals.

#### #.1 Horizontal Sliding Steel Doors

Doors shall be electrically operated, flush design. Faces shall be as shown on the drawing. Doors shall have heavy-duty overhead track complete with brackets and end stops. Trolleys shall be of the four wheel, sealed heavy type.

#### #.1 Swinging Steel Doors

Doors shall be manually operated flush design as shown on the drawings. Doors shall be supported with heavy duty bearing hinges.

#### #.1 Electric Operators

Operators shall be furnished complete with electric motor, reduction gears, magnetic brake, friction clutch, emergency release for manual operation, heavy duty roller chain, controls, limit switches, and other accessories. The operator shall be designed to permit motor removal without affecting limit-switch timing on emergency auxiliary operators. A manually operated crank-gear or chain-gear mechanism capable of moving door with a max. force of 45 pounds shall be provided on horizontal sliding doors, to permit manual operation. Manual operation may be through a gear box.

#### #.1 Motor

Motor shall be totally enclosed, constant duty type, instantly reversible, capable of moving door at not less than 1/6 foot per second and designed for high frequency operation. Motor shall have a short-time rating of not less than 5 minutes.

#### #.1 Controls

Each door motor shall have an enclosed reversing across-the-line type magnetic starter having thermal overload protection, solenoid-operated brake, limit switches, and two remote-control switches. The starter shall conform to NEMA ICS 2. Remote control switches shall be of the three-button type with the buttons marked "OPEN.", "CLOSE", and "STOP." CLOSE button shall be momentary-contact type requiring constant pressure to maintain motion of the door. Pushbuttons shall be full-guarded type to prevent accidental operation. Limit switches shall automatically stop the doors at their fully opened and closed positions. Positions of the limit switches shall be readily adjustable.

#### #.1 Transformers

Transformers shall be provided to reduce the voltage on the control circuits to a maximum of 120 volts.

### #.1 Safety Device

The bottom edge of electrically operated doors shall have a safety device that will immediately reverse the door movement upon contact with an obstruction. The safety device shall be installed across the entire width of the door and shall not substitute for a limit switch.

### #.1 Electrical Work

Electric-motor-driven devices required for operation of the doors and any wiring required but not indicated on the electrical drawings shall be provided under this section. Electrical equipment and wiring shall conform to Section 16415 ELECTRICAL WORK, INTERIOR. Flexible connections between door and fixed supports shall be type SO cable. The cable shall have a spring-loaded automatic take-up reel or equivalent device. The flexible connection shall incorporate a solid copper ground connection from building structural steel to door structural steel to provide safety and static grounding.

:

## PART 3 EXECUTION

### 3.1 INSTALLATION

Frames and accessories shall be installed plumb, level, and rigid. Backs of hollow frames shall be filled with concrete. Doors shall be installed and lubricated, as recommended by the manufacturer, to operate freely and easily. Weatherstripping shall be installed at door openings to provide a weather tight installation.

### #.1 FABRICATION

Doors and Hardware shall be shop assembled.

### #.1 CONSTRUCTION QUALITY CONTROL

Attention is directed to Section 01451 CONTRACTOR QUALITY CONTROL which requires the Contractor to perform quality control inspection, testing, and reporting.

-- End of Section --